

GRANT & HACKH'S CHEMICAL DICTIONARY

[American, International, European and British Usage]

*Containing the Words Generally Used in Chemistry,
and Many of the Terms Used in the Related
Sciences of Physics, Medicine, Engineering,
Biology, Pharmacy, Astrophysics,
Agriculture, Mineralogy, etc.*

Based on Recent Scientific Literature

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carbon atom: primary a., $R\cdot CH_2OH$; secondary a., R_2CHOH ; tertiary a., R_3COH ; (2) the number of OH groups; as, $R(OH)_n$.

$R(OH)_1$	mono-	Prefix -hydroxy	a. or	Suffix ol diol triol tetrol pentol poly-
$R(OH)_2$	di-			
$R(OH)_3$	tri-			
$R(OH)_4$	tetra-			
$R(OH)_5$	penta-			
$R(OH)_n$	poly-			

See *aromatic alcohols*, *phenols*, and *alcohol acids*. **aldehyde** ~

Compounds containing the $-CHO$ and $-OH$ groups. **aromatic** ~ Cyclic compounds containing the $-OH$ group in a side chain; cf. *phenols*. **primary** ~ Compounds containing the group $-CH_2OH$. **secondary** ~ Compounds containing the $=CHOH$ group. **tertiary** ~ Compounds containing the $=COH$ group.

a., of crystallization The a. contained in a crystalline salt in a molecule; e.g., $KOH \cdot 2C_2H_5O$.

alcoholysis The cleavage of a C-C bond by the addition of an alcohol: $R \cdot CH_2 \cdot R' + R''OH \rightarrow R'OCH_2R + R'H$. Cf. *hydrolysis*.

alcoholmeter See *breath alcohol*.

alcohol. Trade name for a surfactant of the dioctylsulfosuccinate type.

alcosol. A sol in alcohol.

alcumite A corrosion-resistant alloy: Cu 88-90, Al 7.5, Fe 28.35, Ni 1%.

alcyli Alicyclic. An aliphatic-cyclic radical; a saturated aromatic radical.

Aldactone Trademark for spironolactone.

aldalactonose A carbohydrate containing the aldehyde ($=CHO$), alcohol ($-OH$), and carbonyl ($=CO$) radicals.

aldehydium Thallium*.

aldehydase Aldehyde oxidase*, which forms acids from aldehydes.

aldehyde (1) Acetaldehyde*. (2) See *aldehydes*. **acetic** ~ Acetaldehyde*. **anisic** ~ Anisaldehyde*. **cinnamic** ~ Cinnamaldehyde*. **cuminic** ~ Cuminic a. **heptylic** ~ Heptanal*. **met** ~ See *metalddehyde*. **nonanthic** ~ Heptanal*. **par** ~ See *paralddehyde*. **propionic** ~ Propionaldehyde*. **pyromucic** ~ Furaldehyde*. **salicylic** ~ Salicylaldehyde.

a. ammonia (1) A compound formed by the combination of an a. and ammonia. Crystalline, decomp. on warming with dilute acid; used for the purification of aldehydes. (2) $MeCH(OH)NH_2 = 61.1$. Colorless crystals, m. 97, soluble in water. **a. condensation** See *aldol condensation*. **a. group** The $-CHO$ radical, in which the H is not replaceable by a positive radical, but can be replaced by negative atoms or groups. Cf. *aldehydes*. **a. ketone** $R \cdot CO \cdot R \cdot CHO$. **Ketoaldehyde**. **a. oxidas** See *aldehydase*.

aldehydene Acetylene*.

aldehydes Organic compounds containing the $-CHO$ radical, oxidized to acids and reduced to alcohols. A. are indicated by the prefix *oxo-* (for O of CO) or *formyl-* (for CHO), or by the suffix *-al**, *-dial**, *-trial**, *-carbalddehyde**, etc. **d** ~ Compounds containing 2 a. groups. **olefin** ~ Compounds containing a double bond and the a. group. **paraffin** ~ Compounds containing the a. group attached to a saturated aliphatic chain. **thio** ~ Compounds containing the $-CHS$ group.

-aldehydic Suffix indicating that one COOH group in a dicarboxylic acid, with a trivial name, has been changed into a CHO group; as malonaldehydic acid, $OHC \cdot CH_2 \cdot COOH$. **a. hydrogen** The H atom of the aldehyde group; not readily replaced by metals.

aldehydine $C_5H_3NMeEt = 121.2$. 2-Ethyl-5-methylpyridine. Colorless liquid, $d_{20} 0.9918$, b. 173, insoluble in water.

aldicarb* See *insecticides*, Table 45.

aldime $R \cdot CH(NH)$. An acid imine.

aldobionic acids Oxidized trisaccharides; as, gluco- β -glucuronic acid, from the hydrolysis of flaxseed mucilage.

aldohexose* A hexose containing the aldehyde group; e.g., glucose. Cf. *ketoheptose*.

aldoketenes See *ketenes*.

aldol $Me \cdot CHOH \cdot CH_2 \cdot CHO = 88.1$. (1) β -Hydroxybutyric aldehyde, 3-hydroxybutanal*. A condensation product of acetaldehyde. Colorless liquid, d. 1.109, soluble in hot water. Its solution leaves a polymer, paralldol, on evaporation. Cf. *paralddehyde*, *metalddehyde*. (2) One of a class of condensation products formed from an aldehyde. **a. condensation** The polymerization of an aldehyde in presence of dilute acid or alkali, e.g., aldol formation. The aldol polymer is stabler than the meta and para polymers. Three types: (1) true aldol condensation: $R_2CO + H \cdot CH_2COR \rightarrow R_2C(OH) \cdot CH_2 \cdot COR \rightarrow R_2C:CH \cdot COR$. (2) Cannizzaro reaction: $2R \cdot CHO \rightarrow R \cdot COOH + R \cdot CH_2OH$. (3) Claisen condensation: $2R \cdot COOR' \rightarrow RC(OH):CHCOOR' + R'OH$.

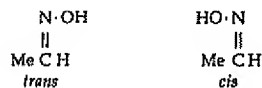
aldolase* See *enzymes*, Table 30.

aldonic acids Acids produced by gentle oxidation of the corresponding aldose; as, gluconic acid from glucose.

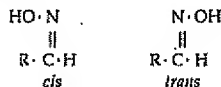
aldopentose* A pentose containing the aldehyde group; as, arabinose.

aldose* A carbohydrate containing the aldehyde group. Cf. *ketose*, *sugar*.

aldoxime $C_2H_5ON = 59.1$. Acetaldoxime. Colorless liquid, b. 115, soluble in water; used in organic synthesis. Isomeric forms:



aldoximes* Organic compounds containing the $-C(H):NOH$ group. Stereoisomers:



Form C-, N- and O-substituted compounds.

aldrey A noncorroding aluminum alloy, used for transmission lines; Mg 0.4, Si 0.6, Fe 0.3%.

aldrin* See *insecticide*, Table 45 on p. 305.

alembic (1) Ancient name for a retort. (2) Figuratively, anything that purifies.

aletris False unicorn, starwort, blazing star, colic root, star grass, bitter grass, devil's bit. The dried rhizomes of *Aletris farinosa* (Haemodorum) of the United States.

Aleurites (1) The Chinese wood or tung oil plant. (2) A genus of trees (Euphorbiaceae) of the warmer zones of Asia which yield oil; as, *A. cordata*, tung oil.

aleurilic acid $C_{16}H_{32}O_5 = 304.4$. 9,10,16-Trihydroxypalmitic acid, m. 102, from the shellac of *Aleurites montana*.

aleurometer A cylinder for testing the baking capacity of flour from the expansion of its gluten.

aleuronate A vegetable protein food. A tasteless, yellow powder. **a. powder** Baked flour mixed with cooked starch for injection into the pleural cavity of animals (rabbits) to stimulate the production of leucocytes. Cf. *leucocyte*.

aleurone Protein grains in the endosperm of ripe seeds.

and amino group, formed by the action of ammonia on ketones. Cf. *polypeptide*.
ketocoumaran Oxodihydrobenzofuran*.
ketodestrin Estrone.
*ketoheptose** A monosaccharide of 6 C atoms, with a ketone group rather than an aldehyde group; e.g., fructose. Cf. *aldohexose*.
ketohydroxyestrin $C_{18}H_{22}O_2 = 270.4$. A hormone from the urine of pregnant women and mares; an anhydride of estriol. Cf. *sterols*.
ketoimine A compound containing an imino and carbonyl group.
ketoindole Oxindole.
ketoketenes See *ketenes*.
ketol Ketone alcohols. A compound containing a carbonyl and hydroxy group. *alpha-*~ A compound containing the $R-CO-CH_2OH$ group. *beta-*~ A compound containing the $R-CO-CH_2-CH_2OH$ group. *saturated*~ An α - or β -ketone alcohol. *unsaturated*~ Activinyl alcohols. A compound containing the unsaturated $R-CO-CH:CHOH$ group.
ketole Indole*.
*ketone** $R-CO-R$. An organic compound containing the carbonyl group, $=C=O$, joined to 2 C atoms. Nomenclature: naming the 2 radicals before the term *ketone* or attaching the suffix *-one* to the hydrocarbon; $CH_3-CO-CH_3$ is dimethyl ketone or propanone (acetone); or attaching the prefix *oxo-*, or the suffix *-quinone*. Classification: (1) Aliphatic, saturated: acetone*, propanone*, Me-CO-Me. (2) Aliphatic, unsaturated: 3-buten-2-one*, MeCOCH:CH₂. (3) Aliphatic, diketones*: biacetyl*, 2,3-butanedione*, MeCOCOME. (4) Cyclic: cyclobutanone*, CO-CH₂-CH₂-CH₂. (5) Quinones:

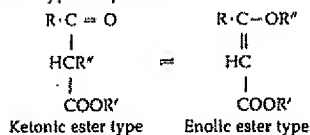
benzoquinone*, CO-CH:CH-CO-CH:CH. (6) Aromatic:

acetophenone, Ph-COME. acid ~ Ketone acid*. aldehyde ~ A compound containing the $=CO$ and $-CHO$ groups. amine ~ Ketoamine. benzyl phenethyl ~ $PhCH_2-CH_2-CO-CH_2-Ph = 224.3$ Colorless liquid, m. 324, soluble in alcohol. butyl methyl ~* 2-Hexanone*. di ~* See *diketone*. dibutyl ~* 5-Nonanone*. diethyl ~* 3-Pentanone*. diheptyl ~* 8-Pentadecanone*. dimethyl ~* Acetone*. dipropyl ~* 4-Heptanone*. ethyl methyl ~* 2-Butanone*. ethyl pentyl ~* 3-Octanone*. ethyl propyl ~* 3-Hexanone*. heptyl methyl ~* 2-Nonanone*. methyl naphthyl ~* $C_{10}H_7-CO-Me = 170.2$. 1-~ Acetonaphthone. Colorless crystals, m. 34, soluble in alcohol. methyl pentyl ~* 2-Heptanone*. methyl propyl ~* 2-Pentanone*. methyl thienyl ~* $(C_4H_5S)COMe = 126.2$. Colorless liquid, b. 213. mixed ~ A k. with 2 different radicals attached to the carbonyl group; as, Me-CO-Et, ethyl methyl k. nitroso ~ A compound containing the $=CO$ and nitroso groups. olefin ~ A k. of the alkene series. paraffin ~ A k. of the alkane series. phenyl thienyl ~* $(C_4H_5S)COPh = 188.2$. Colorless crystals, m. 55, soluble in alcohol. simple ~ A k. with the same 2 radicals attached to the carbonyl group. tri ~ A compound containing 3 carbonyl groups.

k. acid* Oxo acid. A compound containing the radicals $=CO$ and $-COOH$. *alpha-*~ A compound containing the radical $-CO-COOH$, e.g., pyruvic acid or 2-oxopropanoic acid. *beta-*~ A compound containing the radical $-COCH_2-COOH$, e.g., acetoacetic acid. *gamma-*~ A compound containing the radical $-CO-CH_2-CH_2-COOH$, e.g., levulinic acid. *doln-*~ A compound containing the radical $-CO-CH_2-CH_2-CH_2-COOH$, e.g., acetylbutanoic

acid. k. alcohol See *ketol*. k. base Michler's k. k. bodies Acetone bodies. Collective term for acetone, acetoacetic acid, and 3-hydroxybutanoic acid, which accumulate in the blood in diabetes, starvation, and vomiting. See *ketosis*. k. color An artificial color containing the carbonyl group, e.g., alizarin. k. form See *ketonic ester type*. k. group The carbonyl, $=C=O$, group attached to 2 C atoms; it usually confers reducing powers.

ketonic Pertaining to a ketone. k. ester type An isomer of an enolic ester-type compound:



Cf. *desmotropism*.

ketonuria Acetonuria. The excretion of acetone in urine, as occurs in ketosis.

ketose* A sugar containing a ketone group. Cf. *aldose*.

ketoside A glucoside which yields a ketose on hydrolysis.

ketosis The presence of ketone bodies in the blood.

ketotriazole Triazolone.

ketoxime (1)* Acetoxime. A compound containing the $=C:NOH$ group, e.g. $Me_2C:N-OH$, acetoxime. (2) A compound containing the $-HC:NO-$ group. Cf. *Beckmann rearrangement*. tetra ~ See *diphenyltetraacetoxime*.

Kevadon Trademark for thalidomide.

Kevlar Trademark for a high-strength aramid.

key atom (1) An atom in a chain whose change in electronic structure induces corresponding changes in the other atoms of the chain. (2) An atom in a ring whose oscillations cause a shift of bonds. Cf. *porphyrin ring*.

kg Abbreviation for kilogram.

kgf Abbreviation for kilogram force.

khat Catta, Arabian tea. The dried leaves of *Catha edulis*; a tea.

khelin Khellin. A synthetic dimethoxymethylfurano-chromone derivative, used for its specific coronary vasodilatory activity. Also obtained from the seeds of the wild Mediterranean plant *Anni visnaga*, Lam.

Khotinsky, Achilles de (1850-1933) Russian-born American instrument designer. de K. cement A cement for glass and porcelain; insulating, covering, and connecting electric wires, glass, rubber, wood, etc.; resistant to ordinary solvents.

kibbled Broken up into small lumps of about 1 cm diameter.

kidney A paired mammalian organ that eliminates nitrogenous waste from the bloodstream; also controls the water concentration and electrolyte content, and, in part, the acid-base equilibrium. Much of the filtrate is reabsorbed, together with useful substances, as, amino acids, glucose, salt, proteins. See *glomeruli*.

kidney ore Red hematite.

kies General term for sulfide ores.

kieselguhr Diatomite. Tripoli powder. Guhr. A diatomaceous or infusorial earth. Used as an absorbent for nitroglycerin (dynamite), in chromatography, for filtration and insulation, and as an abrasive in soaps.

kieserite $MgSO_4 \cdot H_2O$. A native magnesium sulfate. White, compact masses in the Stassfurt salt beds.

Kikuchi lines The black and white lines which appear when a stream of electrons is scattered by a crystal surface. Cf. *electron microscope*.

killeen Irish moss.